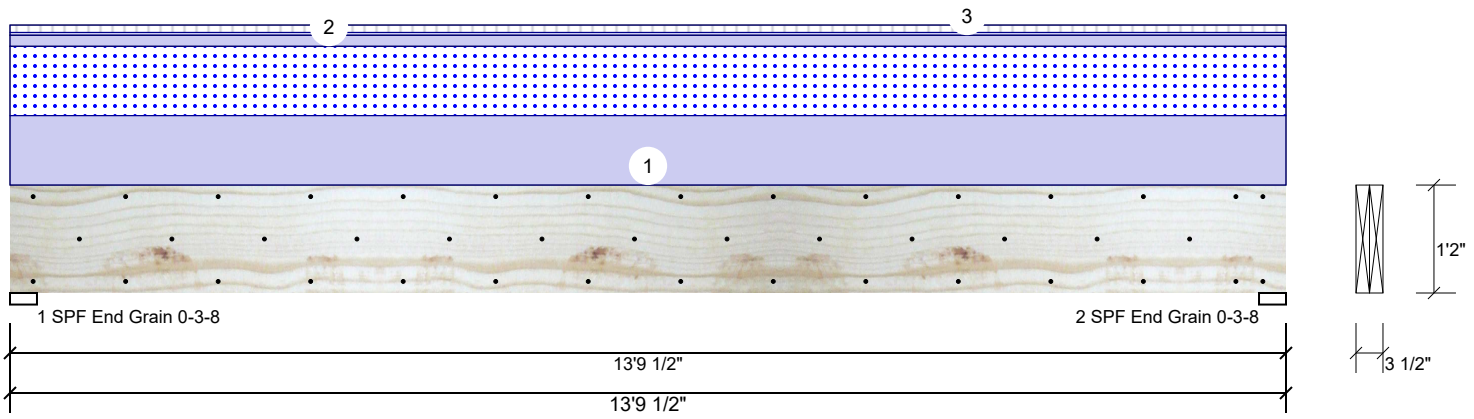
Client:	STE General Contractors	Date:	2/20/2024
Project:		Input by:	David Landry
Address:		Job Name:	Lucas Residence
		Project #:	J0224-0932

BM1 Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	276	3192	2600	0	0
2	Vertical	276	3192	2600	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	56%	3192 / 2600	5792	L	D+S
2 - SPF End Grain	3.500"	Vert	56%	3192 / 2600	5792	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	18664 ft-lb	6'10 3/4"	31049 ft-lb	0.601 (60%)	D+S	L
Unbraced	18664 ft-lb	6'10 3/4"	31049 ft-lb	0.601 (60%)	D+S	L
Shear	4580 lb	12'4"	12021 lb	0.381 (38%)	D+S	L
LL Defl inch	0.187 (L/855)	6'10 3/4"	0.333 (L/480)	0.562 (56%)	S	L
TL Defl inch	0.417 (L/384)	6'10 3/4"	0.444 (L/360)	0.938 (94%)	D+S	L

Design Notes

1. Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
2. Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
3. Refer to last page of calculations for fasteners required for specified loads.
4. Girders are designed to be supported on the bottom edge only.
5. Top loads must be supported equally by all plies.
6. Top must be continuously laterally braced.
7. Bottom must be laterally braced at bearings.
8. Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	377 PLF	0 PLF	377 PLF	0 PLF	0 PLF	C3
2	Uniform			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Above
3	Tie-In	0-0-0 to 13-9-8	1-0-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor Load
	Self Weight				11 PLF					

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 6/28/2026

Manufacturer Info

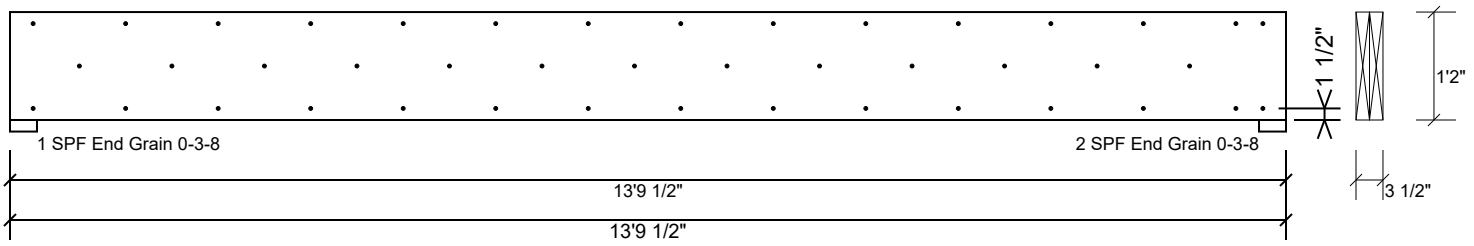
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Comtech, Inc.
1001 S Reilly Rd., NC 28314
(910) 864-8787

Client:	STE General Contractors	Date:	2/20/2024
Project:		Input by:	David Landry
Address:		Job Name:	Lucas Residence
		Project #:	J0224-0932

BM1 Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6".

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	245.6 PLF
Yield Limit per Fastener	81.9 lb.
C_M	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 6/28/2026

Manufacturer Info

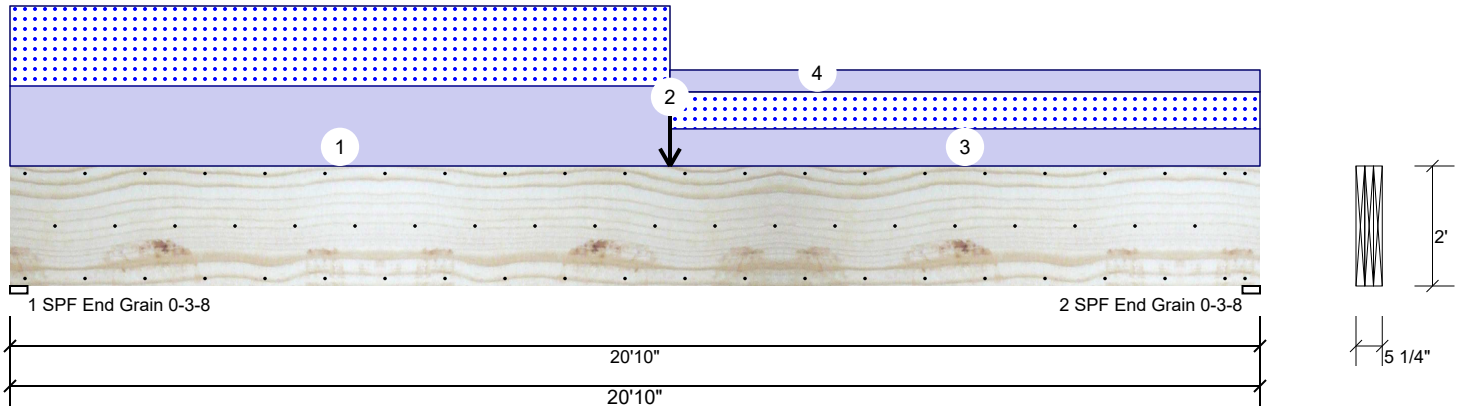
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Comtech, Inc.
1001 S Reilly Rd., NC
28314
(910) 864-8787

Client:	STE General Contractors	Date:	2/20/2024
Project:		Input by:	David Landry
Address:		Job Name:	Lucas Residence
		Project #:	J0224-0932

GDH Kerto-S LVL 1.750" X 24.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Header	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	600	Load Sharing:	Yes
Deflection TL:	480	Header Supports Glass:	No
Importance:	Normal - II	Deck:	Not Checked
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	6044	5481	0	0
2	Vertical	0	5603	4403	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	75%	6044 / 5481	11525	L	D+S
2 - SPF End Grain	3.500"	Vert	65%	5603 / 4403	10006	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	69339 ft-lb	11'	131295 ft-lb	0.528 (53%)	D+S	L
Unbraced	69339 ft-lb	11'	131295 ft-lb	0.528 (53%)	D+S	L
Shear	9500 lb	2'3 1/2"	30912 lb	0.307 (31%)	D+S	L
LL Defl inch	0.213 (L/1150)	10'6 3/16"	0.408 (L/600)	0.522 (52%)	S	L
TL Defl inch	0.456 (L/537)	10'6 3/4"	0.510 (L/480)	0.894 (89%)	D+S	L

Design Notes

1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
2 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6". Nail from both sides.
3 Refer to last page of calculations for fasteners required for specified loads.
4 Girders are designed to be supported on the bottom edge only.
5 Top loads must be supported equally by all plies.
6 Top must be continuously laterally braced.
7 Bottom must be laterally braced at bearings.
8 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Part. Uniform	0-0-0 to 11-0-0		Top	440 PLF	0 PLF	440 PLF	0 PLF	0 PLF	C2
2	Point	11-0-0		Top	3038 lb	0 lb	3038 lb	0 lb	0 lb	C2-GR
	Bearing Length	0-3-8								
3	Part. Uniform	11-0-0 to 20-10-0		Top	204 PLF	0 PLF	204 PLF	0 PLF	0 PLF	C3
4	Part. Uniform	11-0-0 to 20-10-0		Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Above
	Self Weight				28 PLF					

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 6/28/2026

Manufacturer Info

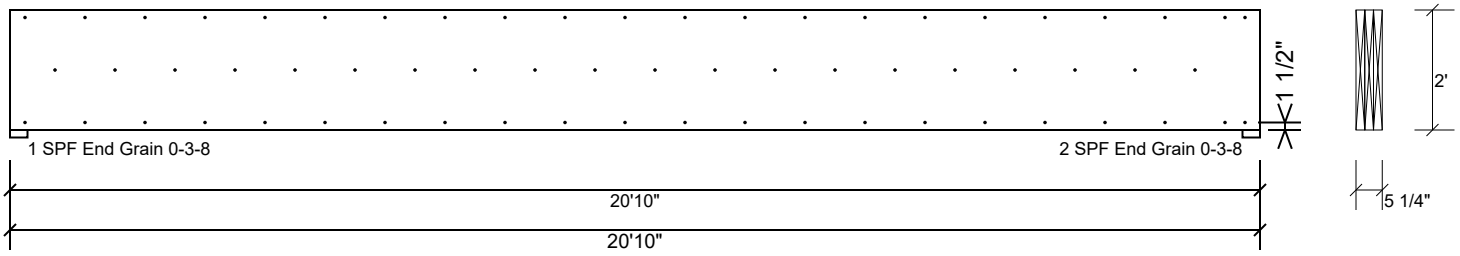
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Comtech, Inc.
1001 S Reilly Rd., NC
28314
(910) 864-8787

Client:	STE General Contractors	Date:	2/20/2024
Project:		Input by:	David Landry
Address:		Job Name:	Lucas Residence
		Project #:	J0224-0932

GDH Kerto-S LVL 1.750" X 24.000" 3-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Nail from both sides. Maximum end distance not to exceed 6".

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	245.6 PLF
Yield Limit per Fastener	81.9 lb.
C_M	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 6/28/2026

Manufacturer Info

Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Comtech, Inc.
1001 S Reilly Rd., NC
28314
(910) 864-8787